Report on the Watershed Mitigation Subcommittee

How is the Watershed Mitigation Subcommittee helping TPEAC improve the environmental permitting process?

TPEAC was created to achieve "transportation permit reform." It has defined ***permit reform*** as having two critical components:

- Reducing the time and/or cost of environmental permits for transportation projects
- Increasing the environmental value of mitigation investments made to offset the environmental impacts of transportation projects

The Watershed Mitigation Subcommittee includes federal, tribal, state, and local agency personnel as well as representatives of associations and not-for-profit organizations with expertise in environmental mitigation, watershed processes and planning, natural resource management, transportation planning, and regulatory review. The Watershed Mitigation Subcommittee is one of several subcommittees to help TPEAC accomplish its reform efforts.

Fundamentally, permit reform involves changing how people make decisions. An environmental permit is not a single decision but rather the result of a long process that involves many decisions – the last of which is the actual permit decision. To accomplish transportation permit reform, each agency must make relatively minor changes in how it makes decisions during the project development process.

TPEAC tasked the Subcommittee with creating a ***watershed approach*** to environmental mitigation. The watershed approach created by the subcommittee has two types of products. One product is a set of several new ***tools*** that provides better and timelier information. The other product is a ***structured process*** that allows agencies to make better use of information (see sidebar for the principal sources of natural

Fundamentally, permit reform involves changing how people make decisions.

An important principle of the subcommittee's work is that significant change is possible with only minor changes within each agency.

How are natural resources managed in this state?

The management of natural resources is complex because there are many laws and policies governing the use of natural resources and many entities implementing those laws and policies.

Two important tools for making natural resource management decisions are plans and permits.

In general, local governments have been given responsibility and authority to develop natural resource plans. For example, cities and counties have primary responsibility for land use planning, shoreline planning, watershed planning, and often, water supply planning.

Local, state, and federal agencies all have responsibilities and authorities to permit the use of natural resources based on specific federal, state, and local regulations.

resource information). These two products work together to provide agencies with better information and a better way to make individual and collective decisions.

The timing is right for using a watershed approach for making decisions. Local watershed plans have been completed or are nearing completion around the state. Also, regional salmon recovery plans are nearing completion in most of the state. Use of subcommittee products, in combination with local plans, will provide a powerful opportunity for changing how environmental permit decisions are made.

What did the legislation direct the Watershed Mitigation Subcommittee to accomplish?

Broadly, the TPEAC legislation directed the subcommittee to develop a "watershed approach" to environmental mitigation. The legislation directed that the subcommittee undertake specific activities, including:

- Develop technical tools that use a watershed approach to expedite mitigation
- Develop multi-agency watershed-based mitigation policy guidance to expedite environmental permitting
- Complete a test of the policy and technical tools
- Develop a schedule (i.e. "Road Map") to integrate watershed tools, policies, and procedures

What is a Watershed Approach?

A watershed approach seeks to understand natural resource impacts, assess the condition of environmental processes, and evaluate restoration options in a landscape context.

Many local governments around the state are completing watershed plans in collaboration with citizens, non-profit groups, and with federal, state, and tribal agencies. Many of these plans comprehensively address water quality, habitat, and water quantity issues in an attempt to improve the condition of the overall watershed.

Using a watershed approach to permitting ensures that decisions on mitigation opportunities are evaluated on their potential to provide measurable environmental benefits at landscape scales.

What technical tools has the Subcommittee developed?

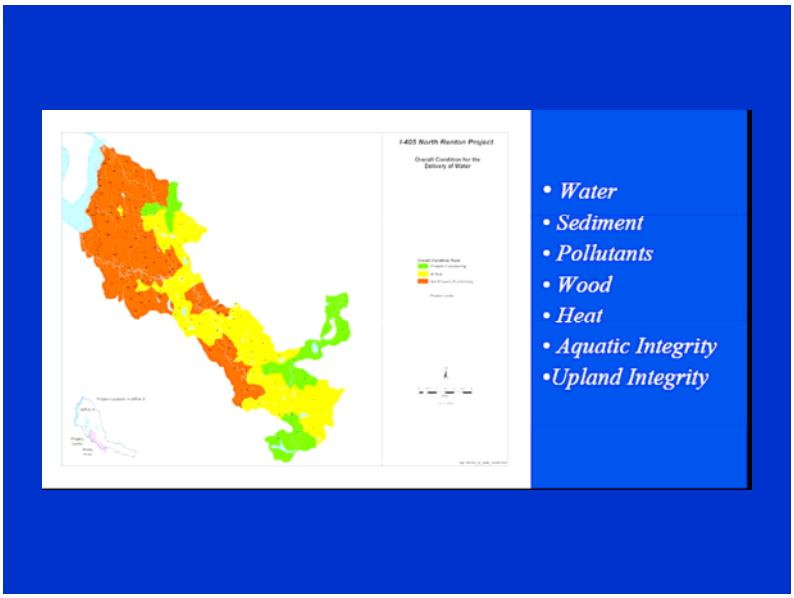
Watershed Characterization Methodology

The subcommittee developed a methodology to characterize the ecological health of the watershed and to use that information to identify areas that would provide the greatest environmental benefit for impacts caused by transportation projects.

The watershed characterization method outlines a scientific framework and set of procedures for identifying, screening and prioritizing a suite of options for mitigating environmental

impacts on large projects with complex environmental issues (see Exhibit 1).

Exhibit 1
Watershed Characterization

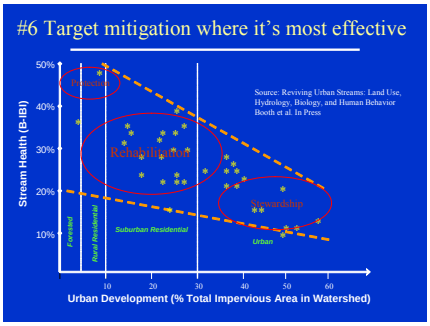


The method includes:

- Characterizing the condition of the watershed to support, maintain, and improve restoration and mitigation efforts
- Assessing potential environmental impacts of a project
- Optimizing avoidance and minimization opportunities
- Identifying, assessing, and prioritizing potential mitigation sites

The watershed characterization technical team has developed a **landscape-scale** method for evaluating watersheds in association with a transportation corridor and identifying and prioritizing potential mitigation opportunities that have the greatest potential to mitigate transportation impacts and maximize environmental benefits. The team has completed four projects, located in Snohomish, King, and Pierce counties to develop, test, and refine the methodology. On the I-405/SR-520 project, the team used the watershed characterization tool to identify and evaluate 4,888 potential wetland, riparian, and floodplain mitigation sites.

Exhibit 2
Benefits of Watershed Characterization



Key Fact:

The SR-167 study encompassed a 350 square mile area, will provide environmental information for a minimum of three corridor studies (SR-167, SR-164, and SR-169), and was completed in five months.

Multiple mitigation sites provide opportunities to maximize environmental benefits and reduce project costs (see Exhibit 2). For example, treating stormwater flow control through the restoration of degraded wetlands provides a new mechanism for meeting mitigation needs and increasing environmental benefits. A wetland restored upstream of a highway project can provide the same stormwater flow control benefits as a detention pond next to the project or a stormwater vault built underneath the highway. Meanwhile, it has many other benefits: wildlife habitat, groundwater recharge, water quality improvement, etc. At the same time, the wetland option may be far less expensive than the engineered option.

Mitigation Screening Tool

A recent WSDOT study found that the cost to mitigate the environmental impacts of transportation projects vary greatly – from four to 34 percent of total project costs. Historically, there has been no way to identify which projects are at risk of high mitigation costs.

The subcommittee oversaw development of a screening tool designed to identify transportation projects that are located near landscape features that have a high likelihood of affecting WSDOT's ability to cost-effectively mitigate for environmental impacts (see Exhibit 3).

Types of landscape features include wetlands, floodplains, unstable slopes, areas of high intensity land use and high land values.

The screening tool can use existing map products made by and for local agencies during land use planning under the Growth Management Act, and during watershed planning. These features can then be overlaid on the transportation project area, and an analysis conducted to assess the risk of facing high mitigation costs.

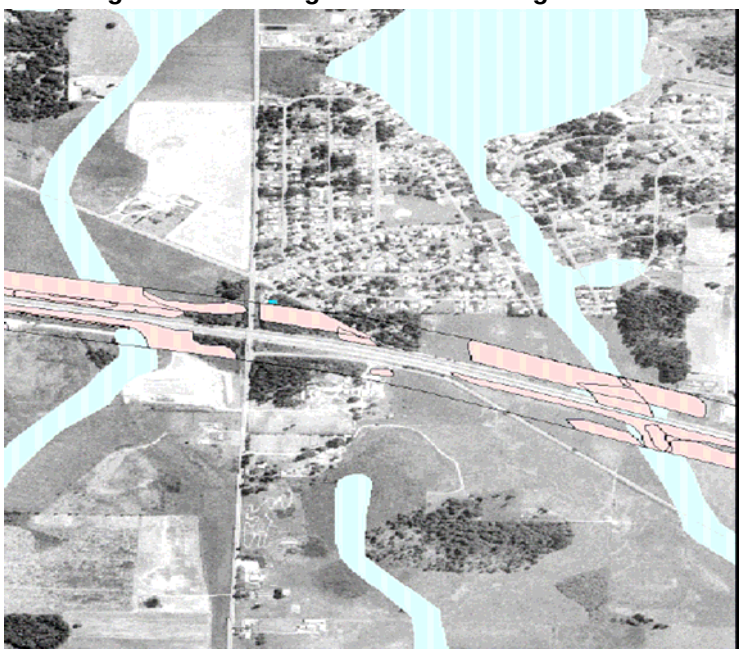
Key Fact:

King County is using the results of the watershed characterization performed for the SR-167 project for land use planning for other projects.

Links to Watershed Characterization Report Information:

http://www.wsdot.wa.gov/environment/watershed/watershed_mitigation.htm

Exhibit 3
The mitigation screening tool identifies high risk areas



The mitigation screening tool has three products:

- A list of risk factors that can adversely impact the ability of a project to mitigate its impacts economically and without inhibiting project delivery.
- A mitigation risk index that uses the key factors and mapping analysis to identify large projects with complex environmental impacts that are candidates for watershed characterization.
- A mathematical model to estimate project stormwater treatment costs at the planning stage. This allows the agency to plan for the use of wetlands for stormwater treatment, both to reduce costs, and improve overall environmental benefits.

Use of the screening tool will enable WSDOT to provide project engineers with an "early warning system" of problems associated with the efficient and effective mitigation of environmental impacts. The use of the screening tool will enable WSDOT to use watershed characterization where mitigation needs are greatest. Mitigation sites chosen using the watershed characterization approach are likely to have greater,

Finding the balance

Project delays have occurred in the past when initial planning and design decisions were made without benefit of sufficient environmental information.

Involving regulatory agencies and affected tribes earlier in the planning and design process can produce better decisions, but will require a cultural change in how WSDOT and the regulatory agencies permit project impacts. Avoiding environmental impacts through better planning and design can significantly reduce the time and costs of the permitting process as well as achieve better environmental results.

Planning and designing a highway project is complex. Transportation project managers must manage for multiple objectives, including public safety, mobility, cost, and environmental protection.

The permitting process must allow agencies to pursue their individual missions while, at the same time, remembering that the "public" expects multiple benefits from highway projects (e.g., safety, congestion improvements, and resource protection).

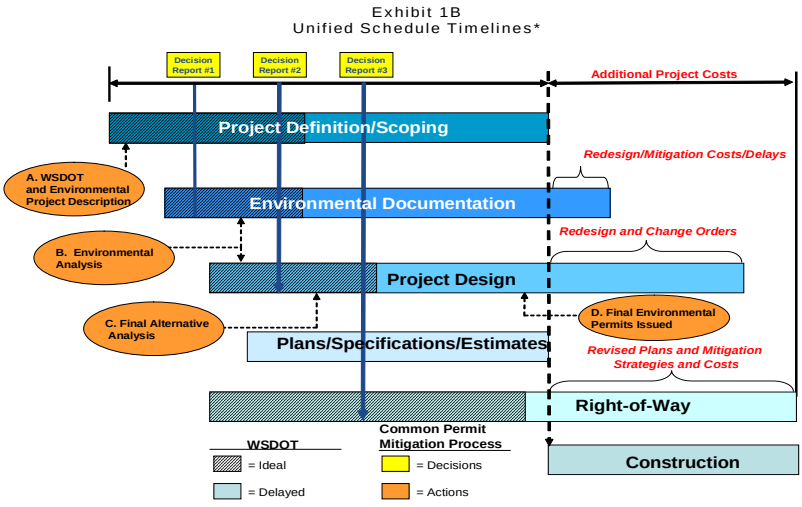
far-reaching, and longer-lasting environmental benefits than sites chosen based on proximity to the impacts.

What policy tools has the subcommittee developed?

Integrated Mitigation Guidance

The subcommittee developed an ***Integrated Mitigation Guidance*** document to promote the use of a watershed approach when making permit and other environmental decisions. The subcommittee intended this guidance document to integrate the mitigation policies of the Washington Department of Fish and Wildlife, the Department of Ecology, and the Department of Transportation. This guidance is being tested on three transportation projects in Walla Walla, Whatcom, and Lewis Counties.

Exhibit 4
The Integrated Mitigation Guidance: A process to improve how, when, and why decisions are made



* The framework for the timelines is based on WSDOT typical project management approach with a joint WSDOT/Resource Agency Common Permit Mitigation Process linked to decisions and project management.

The ***Integrated Mitigation Guidance*** (see Exhibit 4) is a framework to allow WSDOT and resource agencies to work more efficiently to process permits and provide more effective mitigation. The framework has six components which can be used together or separately to meet the needs of a transportation project:

Key Fact:

In the SR-12 field test, more than 140 mitigation projects were identified through interviews with Federal, state and local agencies, tribes, and interest groups.

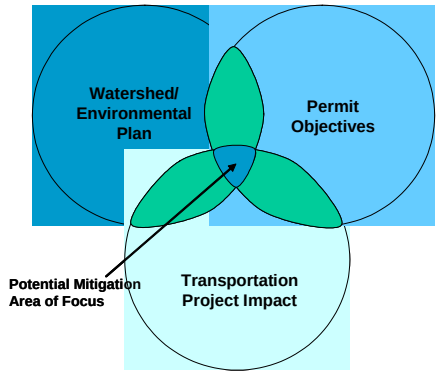
Integrated Managing of Information, Decisions, and People

Permit reform is about how people use information to make more effective and efficient decisions. The Unified Schedule, Decision Report, and Team Approach are used together to provide a structured process to allow agency staff to individually (within agencies) and collectively (across agencies) manage information to make more effective and efficient decisions.

Watershed Characterization, the Common Permit Process, and the Performance-based Approach provide new and multiple options (see page 7) to help agencies make better decisions about how to address the environmental impacts of transportation projects in a manner that balances what the public "wants" from its transportation system.

- **Unified Schedule**: A timeline of key activities and decisions for both WSDOT and the resource agencies (see Exhibit 4). The schedule improves communication and expectations, reduces surprises, and helps keep projects on time and on budget.
- **Decision Report**: A structured approach to document how and why decisions are made. The decision report helps to avoid delays when new staff persons are brought into a project. The report also serves as a vehicle for the interagency team (see "Team Approach" below) to provide input into the environmental implications of proposed planning and design decisions. The Unified Schedule and the Decision Report collectively form a blueprint for how, why, and when decisions are made by the team.
- **Team Approach**: The interagency team structure allows agencies to work together efficiently to meet individual agencies responsibilities in a manner that allows for collective responsibilities to be met.
- **Use of Existing Local Watershed Plans**: Watershed characterization is a structured approach to identify multiple mitigation options. A formal approach to characterization is profiled on page 2 of this report. A less rigorous approach uses existing local watershed plans and related documents to identify suitable mitigation options. The approach is being used for the field tests of the mitigation policy in Walla Walla, Whatcom, and Lewis Counties.
- **Common Permit Process**: An approach to making permit decisions that includes an evaluation of both on-site and off-site mitigation opportunities to identify options that provide the greatest value in terms of cost effectiveness and environmental benefit.
- **Performance-Based Approach**: A risk management tool that uses an adaptive management approach to identify and appropriately address risk factors that may affect the overall performance of a selected mitigation option. The approach can provide additional options for managing risk and may also lower overall mitigation costs.

Exhibit 5
Identifying mitigation that meets multiple objectives



What procedural improvements has the subcommittee demonstrated?

Combining the use of the technical and policy tools is creating new outcomes – that is, they are beginning to show how permitting decisions can be improved. This section describes results of using the policy tools and technical tools together.

On the SR-539 project, for example, a decision-making process is being developed using watershed plan information, watershed characterization tools, and the policy tools (Exhibit 6). Existing information regarding potential restoration projects has been collected through document reviews and interviews, resulting in more than 250 potential projects. A first level screening tool was developed and used to make a short list of 15-20 projects to undergo field screening. Final documentation is being prepared to demonstrate the decision process and provide final mitigation options for WSDOT to consider.

On the US-12 project, an information management tool has been developed using the Unified Schedule and Decision Report in combination with existing WSDOT procedures (see exhibit 7). The field test of the policy tool on the US-12 project has conceptually demonstrated how WSDOT can use environmental documents efficiently and effectively by using an information management process where the information collected for one environmental decision can be used - and systematically built on – for other environmental decisions (See sidebar for additional detail). Another outcome of the IMG procedure is that it demonstrates how watershed plans and environmental information can be used to help decision-makers avoid environmental impacts. Further, including affected tribes early in the process facilitates the avoidance of both natural and cultural resources important to the tribes.

Exhibit 6
Watershed Plans help make better decisions about mitigation

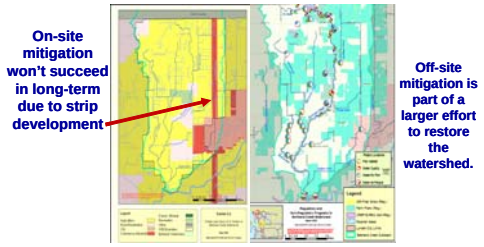


Exhibit 7
Watershed Plans and environmental information can be used to avoid project impacts

How has the Subcommittee tested the technical and policy tools?

Field Tests

The watershed characterization methodology profiled on page 2 has been tested on four urban transportation projects: SR-

Field tests provide an important "laboratory" for determining how well the products work in "real life" situations.

The Watershed Characterization Tool was successfully tested in King County, Pierce County, and Snohomish County. The tool identified hundreds of potential mitigation sites.

The Integrated Mitigation Guidance is currently being tested in Walla Walla County, Whatcom County, and Lewis County.

522, two projects on I-405, and SR-167. The methodology has successfully identified hundreds of potential mitigation options to mitigate wetland, stormwater, and riparian impacts for these projects.

Field tests are also being conducted for the Integrated Mitigation Guidance in three non-urban areas of the state: US-12 in Walla Walla County, SR 539 in Whatcom County, and I-5 in Lewis County. In these field tests, watershed plans and other sources of information are being used as the basis to identify suitable mitigation for transportation project impacts.

What is the schedule for integration of the mitigation tools?

The final task given to the subcommittee was to develop a schedule to integrate its technical, policy, and procedural tools. The subcommittee is in the process of evaluating a proposed **Road Map** – a detailed set of directions to meet the subcommittee's overall "charge" to institutionalize a watershed-based approach to environmental mitigation. The purpose of the Road Map is to take the watershed approach beyond the field-testing stage so that it can be used on a daily basis around the state to improve both the timing and quality of permit decisions.

Proposed Road Map

The central tenet of the proposed road map is that permit reform through a watershed approach is best accomplished by intentionally integrating TPEAC products with the watershed and land use planning tools currently being developed by local governments. A partnership between state, tribal, and local governments creates a political, scientific, technical, and procedural foundation to change how environmental decisions are made both in the short-term and long-term. As such, the partnership is essential to transportation permit reform. In addition, TPEAC products can improve watershed planning decisions, and conversely, watershed plans can improve how TPEAC products are used to shape environmental decisions on transportation projects.

Ecology Stormwater Policy

As a result of the formal watershed characterization work (profiled in technical tools), and collaborative policy work between WSDOT and the Department of Ecology, a new stormwater policy has been developed to allow WSDOT to restore or enhance natural wetlands to offset stormwater impacts of new highway surfaces. Policies such as these meet TPEAC objectives for permit reform.

A second tenet of the proposed road map is that transportation permit reform can be accelerated by broadening the scope of reform to include other infrastructure projects. If strategically used, the collective mitigation efforts of WSDOT, state agencies, county and city public works, ports, special purpose districts, and private developments can substantially contribute to a systematic implementation of local watershed plans. Faster implementation of watershed plans will, in turn, accelerate the speed with which resource agencies use watershed plans and TPEAC products to guide permit decisions.

Mitigation Banking Discussions.

WSDOT and King County are discussing opportunities to use watershed characterization to identify mitigation banking sites.

A third tenet of the proposed road map is that integration of watershed plans and land use plans will accelerate transportation permit reform. Washington State is projected to increase its population by approximately 28 percent over the next 20 years. More people mean new infrastructure projects and new impacts to the environment. There is abundant evidence that small "postage stamp" mitigation sites are not effective in restoring watershed health. Given the continuing increase in population, watershed health is only possible if there is an intentional and systematic integration of land use planning, watershed planning, and permit delivery.

To further these tenets, the subcommittee is coordinating with other agencies in their efforts to develop concepts such as Mitigation Optimization and the Puget Sound Nearshore Partnership Project.

Proposed Action Items to Implement the Road Map

Action Item #1 - Support Building Local Infrastructure in order to Develop and Maintain Restoration/Recovery Databases

Action Item #2 – Support Including Tribal Priorities, Information, and Restoration Opportunities into Locally Developed Restoration Datasets

Action Item #3 – Integrate Watershed Characterization Technical Tools and Information Into Existing Watershed Planning Efforts

- Assist local governments that are developing watershed plans to incorporate new watershed characterization technical tools into their planning process.
- Assist local governments that are developing watershed plans to assess data gaps and acquire data needed to evaluate individual restoration sites in both a site and a landscape context.
- Use locally developed plans and resulting restoration databases to create a list of mitigation options.

Action Item #4 - Integrate Environmental Mitigation Needs Into Watershed Planning

- Identify watersheds in which to establish pilot tests to evaluate the application of Action Items 1-3

Action Item #5 – Include the Early Identification of Environmental Mitigation Needs in Land Use and Transportation Planning

- Explore using existing land use planning tools to identify high value natural resource restoration sites for the mitigation of current and future planned development.

Action Item #6 – Establish a Planned Network of Advance Mitigation and/or Mitigation Banking Opportunities

- Use project screening tool to identify areas of significant transportation mitigation needs over next 10+ years.
- Work with local jurisdictions and watershed planning groups to identify opportunities to restore large, environmentally significant, wetland and floodplain systems in metropolitan areas in advance of transportation projects. These areas can be used as banks from which credits can be drawn to mitigate future impacts or as advance mitigation for these impacts.
- Explore opportunities to streamline the mitigation banking process.

Action Item #5 works directly with cooperating local jurisdictions.

Currently, land use planning focuses on future development and the preservation of existing natural resources, but does not identify and prioritize key restoration sites.

Planned Network of "Advance Mitigation" Opportunities

Action Items #1-5 prepare the way for the restoration of large, environmentally significant wetland and floodplain systems before environmental impacts associated with transportation projects occur. This approach is called "advance mitigation."

While success will be dependent on cooperation and partnerships from both public and private sectors, substantial social and environmental benefits are possible.

Action Item #7 – Conduct Training for Local Governments as Appropriate to Facilitate the Integration of Watershed Characterization and Other Tools Created by the Watershed Subcommittee.

Action Item #8 – Explore Opportunities to Include Tools Created by the Watershed Subcommittee into WSDOT's Environmental Procedures Manual.

Action Item #9 – The Subcommittee Will Develop Tasks and Timelines to Implement Action Items #1 - #8 By March 2006.

What technical lessons has the subcommittee learned?

Watershed Characterization

- Is capable of analyzing the environmental concerns and opportunities within large-scale project areas in a timely, cost effective manner. This approach should be used for complex, large-scale projects.
- Has a long shelf life. Compared to traditional mitigation efforts that identify three to ten candidate mitigation sites for a project, the watershed characterization approach seeks to identify all viable wetland, riparian, and floodplain restoration sites in the study area.
- Can be used to help implement watershed plans and to locate wetland and conservation banks.
- Compiles new environmental information at multiple scales that can serve as the foundation for WSDOT corridor studies and environmental documentation and local jurisdiction planning.
- Is most effective and useful when done prior to project planning and design.
- Facilitates enhanced avoidance and minimization of natural resource impacts.

Mitigation Screening Tool

- Identifies risk factors that cause mitigation costs to increase. Projects can be prioritized based on risk. The

Pilot Mitigation Banking Funds.

Section 218 of ESSB 6091, passed in 2005, appropriated $300,000 to WSDOT to contract with the Associations of Washington Cities and Washington State Association of Counties for activities of TPEAC including pilot mitigation banking activities, and other permit delivery efforts.

watershed characterization approach can then be used for projects that have the highest risk.

- Provides important information used in cost-risk analysis of transportation projects.

What policy lessons has the subcommittee learned?

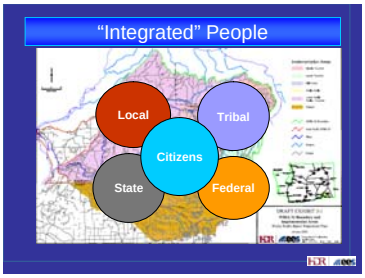
Managing for Multiple Objectives

- The planning, permitting, and building of transportation projects requires that multiple objectives (safety, mobility, cost, environmental protection, cultural resources, and social equity) be successfully managed.
- A multi-agency "team" approach to permitting facilitates efficient and effective permitting, instead of each agency managing for its single-purpose objective.

Relationship Building, Trust, and Social Networks

- Early involvement of agency permit writers, transportation planners, engineers, biologists, and watershed stewards can promote trust and expedite the permitting process.
- Incorporating local plans and planning staffs and affected tribes facilitates coordination and reduces potential for project delays (Exhibit 8).
- Independent of TPEAC, the local watershed planning process has created a vital infrastructure of organizations and partnerships committed to improving watersheds through a multiple-objective management approach.

Exhibit 8
Roles and responsibilities for implementation



What procedural lessons has the subcommittee learned?

- The watershed approach to permit streamlining is most effective and useful when done prior to project planning and design. Done early, the planners have new information to make good environmental decisions including the opportunity to avoid and minimize impacts.
- The watershed-based approach to mitigation provides a variety of options that meet the needs of WSDOT, tribal and state resource agencies, and local jurisdictions for cost-effective, sustainable mitigation projects.
- The signing of a permit is the last of several important environmental actions made through the life of a

transportation project. A clear decision-making process, information sharing, and early and active collaboration are all important to improving and streamlining the many environmental decisions that lead to a permit for a transportation project.

Next Steps

- Developing a schedule for implementing the road map will be part of the next steps for the committee. This work will be undertaken through the final year of TPEAC (ending March 2006).